

3600.2390-D2
January 28, 2002 (2:17PM)

Docket: AM-2390-D2

REMARKS

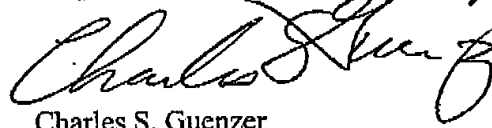
Claims 6-16 remain in the application. Elected Claim 11 has been broadened to include a generic tungsten filling step. The limitation is reintroduced in newly added Claim 14, while sputtering specified in Claim 15, as supported in the filed specification in Claim 15. The magnetron is also not required in Claim 11 to be rotatable. The limitation is reintroduced in Claim 16.

Applicants elect the coating process invention of Claims 6-13.

In view of the above amendments and remarks, early allowance of all claims is respectfully requested. If the Examiner believes that a telephone interview would be helpful, he is invited to contact the undersigned attorney at the listed telephone number, which is on California time.

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Respectfully submitted,


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Version with markings to show changes made

11. (Amended) An tungsten fill process, comprising the steps of:

placing a substrate containing a hole formed in a dielectric layer in a magnetron sputter reactor including a titanium target and a [rotatable] magnetron comprising an inner pole of a first magnetic polarity and producing a first total magnetic flux and an outer pole of an opposite second magnetic polarity, producing a second total magnetic flux at least 1.5 times said first magnetic flux, and surrounding said first magnetic pole;

in said magnetron sputter reactor, sputtering a barrier layer of titanium and titanium nitride into said hole; and

thereafter filling tungsten into said hole of said substrate [by chemical vapor deposition].

Please add the following new claims:

14. (New) The process of Claim 11, wherein said filling is performed by chemical vapor deposition.

15. (New) The process of Claim 11, wherein said filling is performed by sputtering.

16. (New) The process of Claim 11, further comprising rotating said magnetron about a back of said target.